STILLA

Crystal Reader Release Note v2.3.0

for the Naica™ System

All modifications made to Crystal Reader software from version 1.2.0 to version 2.3.0 are listed in the Table below.

Modification types include:

- **New feature addition**, highlighted in blue when significant
- **Improvement**, highlighted in blue when significant
- **Configuration change**, highlighted in gray when significant
- **Bug correction**, highlighted in orange when significant
- **Modification in the exported data**, written in red

Soft. version	Modification		
	ID	**Type**	**Description**
2.3.0	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 2.3.0
	#1469	Feature	This new feature has been added: Addition of the possibility to scan the "Sample Name" of the chambers with a barcode reader with an auto-complete function for the user to gain time: the "enter" key is simulated to automatically position the focus in the next chamber after each barcode scan (where chambers are ordered first from top to bottom, then from left to right). This new feature is compatible with the pooling feature: if the user uses a barcode reader to enter the "Sample Name" of a given chamber pooled with other chambers, then the next chamber is automatically set to the first chamber that is not pooled with that given chamber.
	#1480	Improv.	This improvement has been made: Addition of a "…" button that automatically opens a file explorer window for each field asking for a configuration path in the Settings menu.
	#1420	Improv.	This improvement has been made: The usability of the rescan popup has been improved to make it clearer.

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Soft. version	Modification		
	ID	Type	Description
	#1240	Improv.	This improvement has been made: The saturated objects which are located outside of the chamber are not counted as saturated objects anymore.
2.2.1	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 2.2.1
	N/A (too many IDs)	Improv.	This improvement has been made: Addition of the possibility to select and process future chip models with different chamber's quantity and/or geometry and/or positioning, as well as different image analysis parameters (e.g. the Opal chip with status "in development").
	N/A (too many IDs)	Feature	This new feature has been added: Addition of the possibility to pool chambers by selecting them in the chip layout and clicking on a "POOL CHAMBERS" button in the "Chamber Details" tab. By definition, all chambers pooled together share the same "Pool ID" (displayed as an incremented number in the chip layout), as well as the same "sample name", "chamber context" and, for each detection channel, the same "sample type", "reference concentration" and "dilution factor". By considering each set of pooled chambers as one larger chamber, this pooling strategy allows to increase the analyzed volume and thus gain detection sensitivity and quantification precision.
2.1.6	#1347	Feature	This new feature has been added: Application dependent template files have been added with the software distribution. They can be loaded via "Load Preset" and selected in the following folder: "C:\Program Files\Stilla\CrystalReader\templates".
	#1343	Feature	This new feature has been added: Allow for chamber navigation with the "Alt + keyboard arrows" in the main experiment edition panel.

Soft. version	Modification		
	ID	Type	Description
	#1340	Feature	This new feature has been added: For RNA analysis experiments using the XLT mix, a specific image analysis configuration file named "AnalysisConfiguration_GenericTemplate_mix-XLT.yaml" (.yaml format) has been added to the software distribution. It is stored in the following folder: "C:\Program Files\Stilla\CrystalMiner\config" In this configuration file, the parameter "m_drop_diameter" is set to 101.53 microns. This value corresponds to the estimated average diameter of the droplets in the V4 version of the Sapphire chips when using the XLT mix.
	#1342 #1337	Feature	This new feature has been added: Allow for chamber navigation with the keyboard arrows in the chamber exploration panel.
	#1336	Improv.	This improvement has been made: It is now possible to activate all the chambers of a chip with one button.
	#1289	Bug	This bug has been corrected: Sometimes, an additional flag appears for no particular reason in the chamber exploration panel.
	#1288	Improv.	This improvement has been made: Trying to delete a chamber that has already been scanned produces a confirmation popup.
	#1287	Bug	This bug has been corrected: It is now impossible to enter 0 ms for an exposure time (minimum value is 1 ms).
	#1280	Bug	This bug has been corrected: In fields of the Experiment name, the chip IDs and the sample names, it is now impossible to type characters that could cause issue with file paths later on.
2.0.0	N/A (too many IDs)	Feature	This new feature has been added: Addition of a chip holder layout in the crystal image exploration page to allow the navigation from one chamber to another while staying in image exploration.
	N/A (too many IDs)	Improv.	This improvement has been made: The Settings page has been improved, and it has been enriched for the Manager and Admin profile by allowing to edit experiment default values and focus calibration parameters.

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	ID	Type	Description
	N/A (too many IDs)	Improv.	This improvement has been made: The Focus Calibration page has been improved, in particular by adding a graphical representation of the sharpness score at each tested focus value.
	N/A (too many IDs)	Improv.	This improvement has been made: The path to save the scanned data is asked at the beginning of each scan.
	N/A (too many IDs)	Improv.	This improvement has been made: The global robustness and traceability of the software has been improved, by means of a complete code refactoring.
	N/A (too many IDs)	Improv.	This improvement has been made: The global usability and wording of the software has been improved.
	N/A (too many IDs)	Bug	This bug has been corrected: Numerous software instabilities have been corrected, related to: instrument control, computer standby, data rescanning, multiple chip holders scanning, grayscale histogram & saturation map synchronization.
1.6.0	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.6.0
	#1018	Config.	This configuration has been changed: The parameter "m_drop_diameter" is now set to 103.82 microns in the .yaml configuration file. This value corresponds to the estimated average diameter of the droplets in the V4 version of the Sapphire chips.
	#1019	Config.	This configuration has been changed: To better include the manufacturing tolerance of chip holders, the testing focus values configured for focus calibration range from 0.6 mm to 1.0 mm with a step of 0.02 mm.
	#1024	Bug	This deployment bug has been corrected: When upgrading the Crystal Reader application, the user settings were reset. They are now correctly restored.
1.5.0	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.4.10.

Soft. version	Modification		
	ID	Type	Description
	#814	Feature	This new feature has been added: A new field "Chamber Comment" has been added in the "Chamber Details" form (just below the "Sample Name" field). This new field allows the user to define a unique context for a given chamber (for example in case of chamber rescan). In case of multiple scans of the same chamber, it will be possible to import all of them in the Crystal Miner application, under the condition that distinct chamber comments have been previously entered by the user in the Crystal Reader application. The chamber comment of each chamber is automatically exported by the Crystal Miner application in the "Chamber_Details" category.
	#815	Feature	This new feature has been added: For chamber context edition, the user has the possibility to select a group of successive chambers using the Shift key between two left-mouse clicks.
	#816	Bug	This bug has been corrected: If a chamber planned to be scanned is not scanned, the generated .ncx file is sometimes still corrupted. However, the .ncx file should not be corrupted at all and the user should have the possibility to rescan the non-scanned chamber without any issue.
1.4.8	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.4.8.
	N/A	Improv.	This improvement has been made, coming from the improvement of the Crystal Miner application: The value of the QC indicator "image sharpness" has been normalized with respect to the number of generated droplets.
	#798	Bug	This bug has been corrected: If the users loads a .ncx file as template via LOAD PRESET and answers "No" when asking to also apply this template to the chambers, then the current chamber configuration of the user is erased with the default configuration.
	#800	Bug	This bug has been corrected: Manually cancelling the scan before it begins does not re enable the "pencil" icon to activate or deactivate chambers.
	#797	Bug	This bug has been corrected: In chamber exploration, the "Previous" and "Next" buttons allowing to explore the previous or next chamber were not deactivated if this chamber is not yet scanned and pre-analyzed.

Soft. version	Modification		
	ID	Type	Description
1.4.5	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.4.5.
	#758	Improv.	This improvement has been made: If a chamber planned to be scanned is not scanned, then a warning message is displayed, suggesting to rescan the chamber, and the generated .ncx file is not corrupted.
	#767	Improv.	This improvement has been made: Update the license content for some open source components (C++ REST SDK, CMake, Libjpeg).
	#1020	Config.	This configuration change has been made: The testing focus values configured for focus calibration range from 0.5 mm to 0.9 mm with a step of 0.02 mm.
	#760	Bug	This bug has been corrected: The previous & next buttons allowing to explore the previous / next chamber images in the chamber exploration window do not work from one chip holder to another.
1.4.2	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.4.2.
	#735	Bug	This bug has been corrected: The Crystal Reader software crashes if regional settings are not in English anymore ("," instead of "." for the decimal symbol; and ;" instead of "," for the list separator).
	#731	Bug	This bug has been corrected: When the user cancels a scan loading process, the 3 forms are expanded in the left panel instead of 1 form only.
	#722	Bug	This bug has been corrected: A "Target Name" field may be erased when the user enters successive "Target Name" and "Fluorophore Name" fields.
	#695	Bug	This bug has been corrected: The .ncx file might not be generated at the end of the scan under some conditions (when the .yaml configuration file loaded as template is not found).
1.4.1	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.4.1.
	#724 #723	Bug	This bug has been corrected: A chamber set to be scanned may sometimes not be scanned or recorded due to a synchronization issue.

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	ID	Type	Description
1.4.0	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.4.0.
	#708	Bug	This bug has been corrected: The next & previous buttons allowing to navigate between the chambers in the chamber exploration window are activated even if the previous / next chamber is not yet scanned or pre-analyzed.
	#678	Config.	This configuration has been changed: The default power configuration of the PC is set to "High Performance" mode, to avoid automatically shut down or reboot during scan / rescan, pre-analysis or focus calibration.
	#679 #660	Improv.	This improvement has been made: To facilitate data entering, the mouse focus is automatically set in the field "Experiment Name" after clicking on NEW EXPERIMENT.
1.3.4	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.3.4.
	#705	Improv.	This improvement has been made: The content of user settings and software configuration is automatically kept at software update.
	#704	Improv.	This improvement has been made: If the configuration database is corrupted at software launch, a warning message is displayed and proposes the user to automatically restore it.
	#703	Improv.	This improvement has been made: The default sample name is automatically incremented from one chamber to another, to better differentiate the samples.
	#676	Bug	This bug has been corrected: Fix some issues occurring during the rescan process.
	#677	Feature	This new feature has been added: When the Prism3 instrument is not yet recognized, an hourglass icon is added to all instrument control buttons (i.e. open / close tray, scan / rescan). Besides, an error message is displayed if the PC is not connected to the Prism3 instrument.
	#557	Feature	This new feature has been added: Add previous & next buttons to directly navigate between the already scanned chambers in the chamber exploration window, without having to close it and click on the previous / next chamber quality flag.

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Soft. version	Modification		
	ID	Type	Description
	#705	Improv.	This improvement has been made: Keep content of user settings files when updating to new a release.
	#704	Improv.	This improvement has been made: Check corruption of user settings files when starting the software.
1.3.2	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.3.2.
	#787	Improv. /Config.	This improvement / configuration change has been made: To make the focus calibration process more accurate, the testing focus values configured for focus calibration range from 0.6 mm to 1.0 mm with a step of 0.02 mm.
	#662	Improv.	This improvement has been made: Remove the floating digits in the scores of the QC flags "Nb analyzable droplets" and " Nb saturated objects".
	#638	Improv.	This improvement has been made: Improve the usability to enter successive chip IDs, for example when using a USB barcode reader on the chips.
1.3.0	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.3.0.
	#637	Improv.	This improvement has been made: In the chamber exploration window, the title of the histogram is renamed from "Grayscale Histogram" to "Pixel Grayscale Histogram". Besides, histogram rendering is improved to more readable.
	#636	Improv.	This improvement has been made: Round up the displayed focus score with 3 digits after coma.
	#627	Improv.	This improvement has been made: The scanning estimation time is more accurate, as the runtime of the improved image pre-analysis algorithm gets shorter than the image acquisition runtime.
	#626	Bug	This bug has been corrected: The score value of the optimal focus displayed in the results of the focus calibration process is not the correct value.
	#625	Bug	This bug has been corrected: Wording correction in the pop-up window asking to insert the next chip holder.
	#624	Bug	This bug has been corrected: When the user with manager rights launches the focus calibration process twice, the application crashes.

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Soft. version	Modification		
	ID	Type	Description
1.2.3	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.2.3.
1.2.2	N/A	Config.	This configuration has been changed: Compatibility with Crystal Miner 1.2.2.
1.2.0	-	-	-